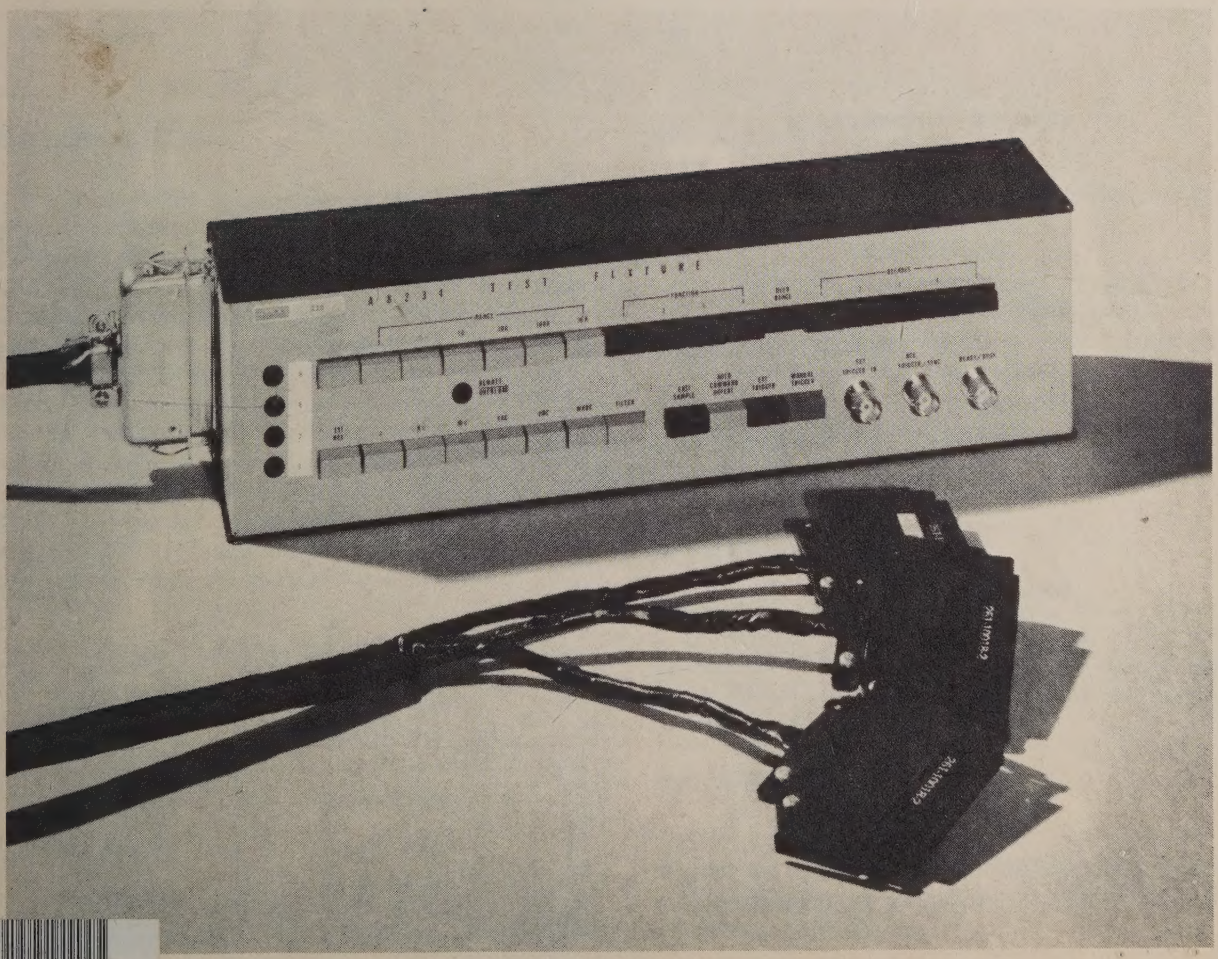
FLUKE®

INSTRUCTION MANUAL

A8234
TEST FIXTURE



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A8234 TEST FIXTURE

INTRODUCTION

The Model A8234 Test Fixture with attaching interface cable and connectors is a manually-operated program source and monitor unit used for the testing of the Models 8200A, 8300A, 8375A, and 8400A Digital Voltmeters. The purpose of the A8234 is to permit an operator to exercise the programmable functions of a voltmeter equipped with a remote control unit (RCU) option while removed from its normal systems environment. In addition to exercising the RCU, the A8234 permits monitoring the function/data outputs of a digital voltmeter equipped with a data output unit (DOU) option while removed from its systems environment. It should be noted that each model of voltmeter to be tested requires a different interface cable for correct operation. The available cables are listed in Table 1.

Table 1. A8234 INTERFACE CABLES

FLUKE P/N	USED WITH (VOLTMETER MODEL)
A8234-7001	Model 8200A
A8234-7002	Model 8300A
A8234-7003	Model 8400A Model 8375A

INSTALLATION

To install/connect the A8234 to the voltmeter under test proceed as follows:

a. Switch the voltmeter under test off and connect the A8234 by means of the appropriate interconnecting cable (the cable must match the particular model of voltmeter being tested).

b. Select the desired operating configuration on the top panel of the A8234 (see Operation paragraph for details) and switch the voltmeter on.

OPERATION

Operation of the A8234 is explained in Figures 1 through 6. Operation differs slightly between voltmeter types and also between RCU testing and DOU testing. Note that the switch relates to RCU testing while the black switches relate to DOU testing.

MAINTENANCE

As an aid to maintenance of the A8234, the assembly drawings and a schematic diagram are presented in the following pages. The lists of replaceable parts are included on the particular assembly drawing.

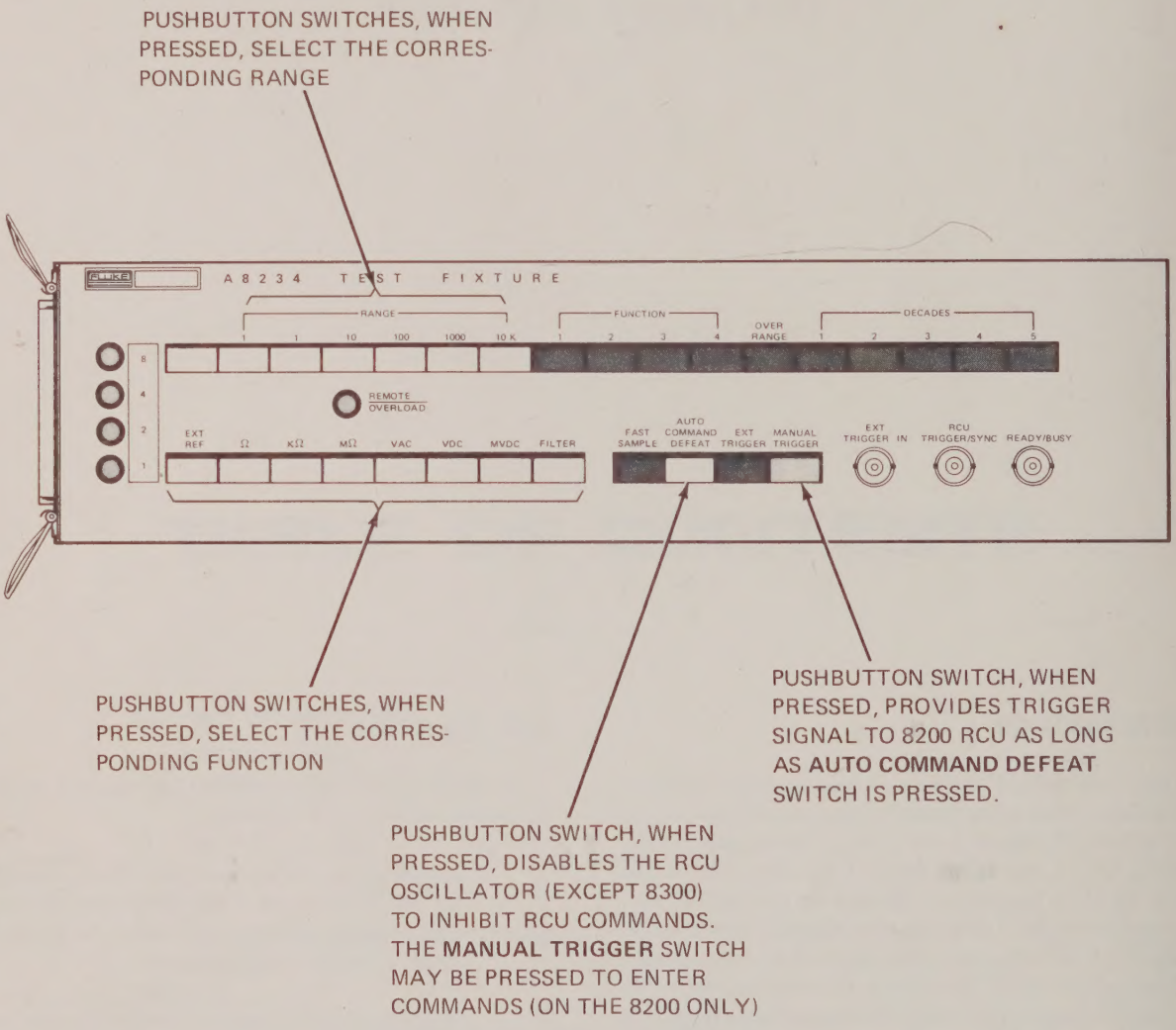

PUSHBUTTON SWITCHES, WHEN PRESSED, SELECT THE CORRESPONDING RANGE
A 8 2 3 4 T E S T F I X T U R E
RANGE
1 1 10 100 1000 10 K
FUNCTION
1 2 3 4
OVER RANGE
DECADES
1 2 3 4 5
8 4 2 1
REMOTE OVERLOAD
EXT REF
Ω
KΩ
MΩ
VAC
VDC
MVDC
FILTER
FAST SAMPLE
AUTO COMMAND DEFEAT
EXT TRIGGER
MANUAL TRIGGER
EXT TRIGGER IN
RCU TRIGGER/SYNC
READY/BUSY
PUSHBUTTON SWITCHES, WHEN PRESSED, SELECT THE CORRESPONDING FUNCTION
PUSHBUTTON SWITCH, WHEN PRESSED, DISABLES THE RCU OSCILLATOR (EXCEPT 8300) TO INHIBIT RCU COMMANDS. THE MANUAL TRIGGER SWITCH MAY BE PRESSED TO ENTER COMMANDS (ON THE 8200 ONLY)
PUSHBUTTON SWITCH, WHEN PRESSED, PROVIDES TRIGGER SIGNAL TO 8200 RCU AS LONG AS AUTO COMMAND DEFEAT SWITCH IS PRESSED.

Figure 1. RCU TESTING FUNCTIONS (ALL MODELS).

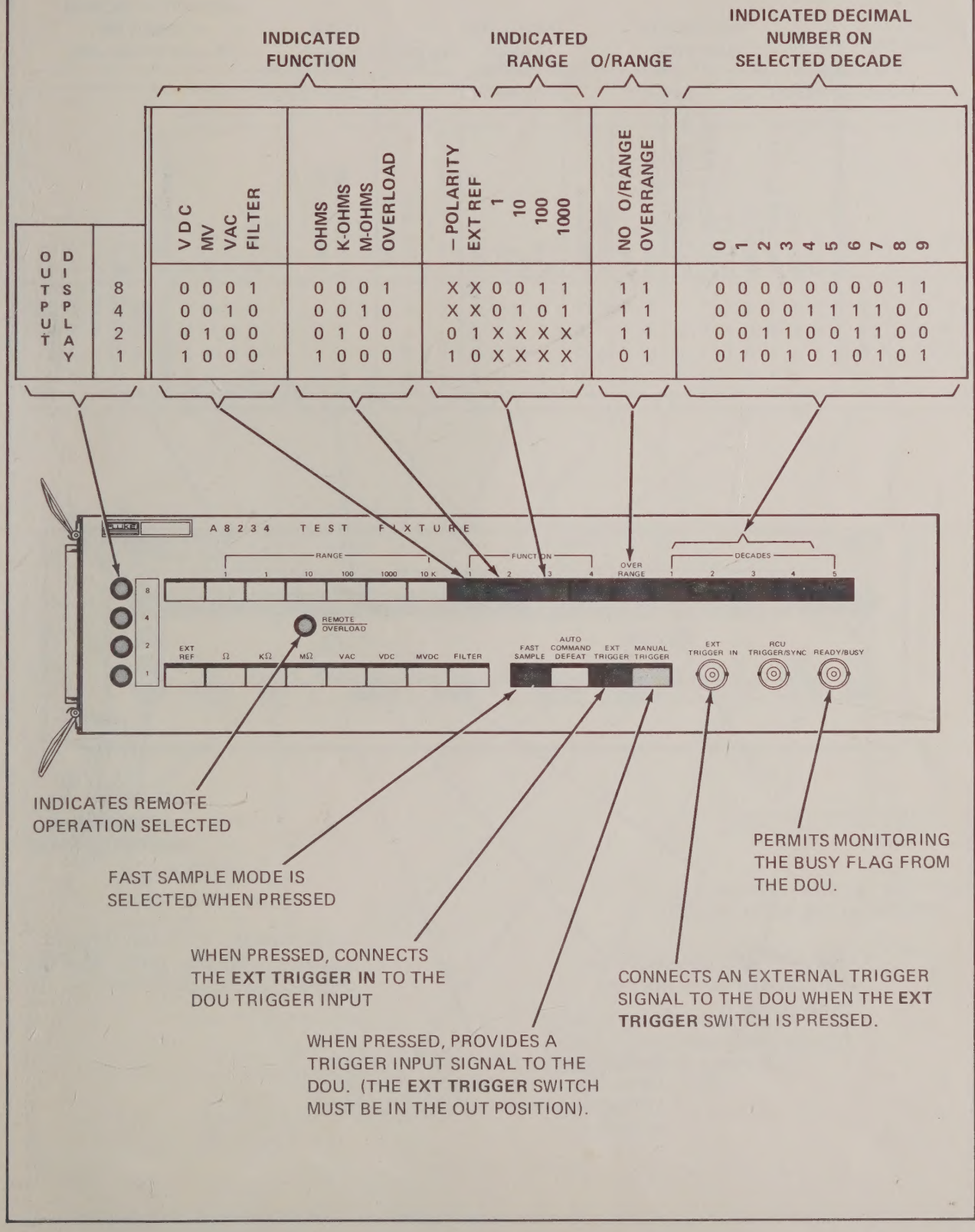

INDICATED FUNCTION
INDICATED RANGE
O/RANGE
INDICATED DECIMAL NUMBER ON SELECTED DECADE
OUTPUT DISPLAY
8 4 2 1
VDC MV VAC FILTER
OHMS K-OHMS M-OHMS OVERLOAD
– POLARITY EXT REF 1 10 100 1000
NO O/RANGE OVERRANGE
0 1 2 3 4 5 6 7 8 9
0 0 0 1 | 0 0 0 1 | X X 0 0 1 1 | 1 1 | 0 0 0 0 0 0 0 0 1 1
0 0 1 0 | 0 0 1 0 | X X 0 1 0 1 | 1 1 | 0 0 0 0 1 1 1 1 0 0
0 1 0 0 | 0 1 0 0 | 0 1 X X X X | 1 1 | 0 0 1 1 0 0 1 1 0 0
1 0 0 0 | 1 0 0 0 | 1 0 X X X X | 0 1 | 0 1 0 1 0 1 0 1 0 1
A8234 TEST FIXTURE
RANGE
FUNCTION
OVER RANGE
DECADES
REMOTE OVERLOAD
EXT REF
Ω
KΩ
MΩ
VAC
VDC
MVDC
FILTER
FAST SAMPLE
AUTO COMMAND DEFEAT
EXT TRIGGER
MANUAL TRIGGER
EXT TRIGGER IN
RCU TRIGGER/SYNC
READY/BUSY
INDICATES REMOTE OPERATION SELECTED
FAST SAMPLE MODE IS SELECTED WHEN PRESSED
WHEN PRESSED, CONNECTS THE EXT TRIGGER IN TO THE DOU TRIGGER INPUT
WHEN PRESSED, PROVIDES A TRIGGER INPUT SIGNAL TO THE DOU. (THE EXT TRIGGER SWITCH MUST BE IN THE OUT POSITION).
CONNECTS AN EXTERNAL TRIGGER SIGNAL TO THE DOU WHEN THE EXT TRIGGER SWITCH IS PRESSED.
PERMITS MONITORING THE BUSY FLAG FROM THE DOU.

Figure 2. MODEL 8200 DOU TESTING.

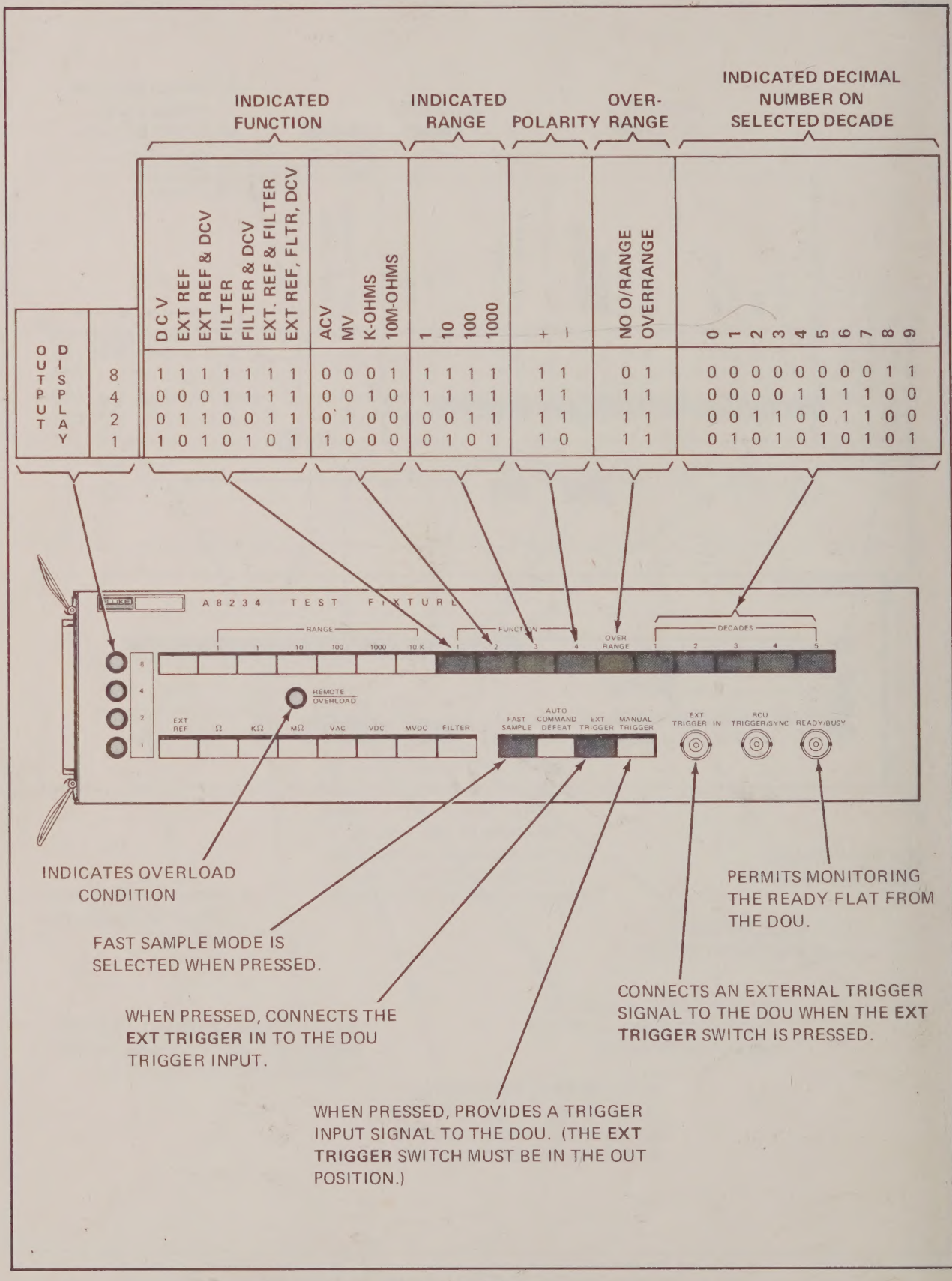

INDICATED FUNCTION
INDICATED RANGE
POLARITY
OVER-RANGE
INDICATED DECIMAL NUMBER ON SELECTED DECADE
OUTPUT DISPLAY
8 4 2 1
DCV EXT REF EXT REF & DCV FILTER FILTER & DCV EXT. REF & FILTER EXT REF, FLTR, DCV
ACV MV K-OHMS 10M-OHMS
1 10 100 1000
+ −
NO O/RANGE OVERRANGE
0 1 2 3 4 5 6 7 8 9
A8234 TEST FIXTURE
RANGE
FUNCTION
OVER RANGE
DECADES
REMOTE OVERLOAD
EXT REF Ω KΩ MΩ VAC VDC MVDC FILTER
FAST SAMPLE
AUTO COMMAND DEFEAT
EXT TRIGGER
MANUAL TRIGGER
EXT TRIGGER IN
RCU TRIGGER/SYNC
READY/BUSY
INDICATES OVERLOAD CONDITION
FAST SAMPLE MODE IS SELECTED WHEN PRESSED.
WHEN PRESSED, CONNECTS THE EXT TRIGGER IN TO THE DOU TRIGGER INPUT.
WHEN PRESSED, PROVIDES A TRIGGER INPUT SIGNAL TO THE DOU. (THE EXT TRIGGER SWITCH MUST BE IN THE OUT POSITION.)
CONNECTS AN EXTERNAL TRIGGER SIGNAL TO THE DOU WHEN THE EXT TRIGGER SWITCH IS PRESSED.
PERMITS MONITORING THE READY FLAT FROM THE DOU.

Figure 3. MODEL 8300 DOU TESTING.

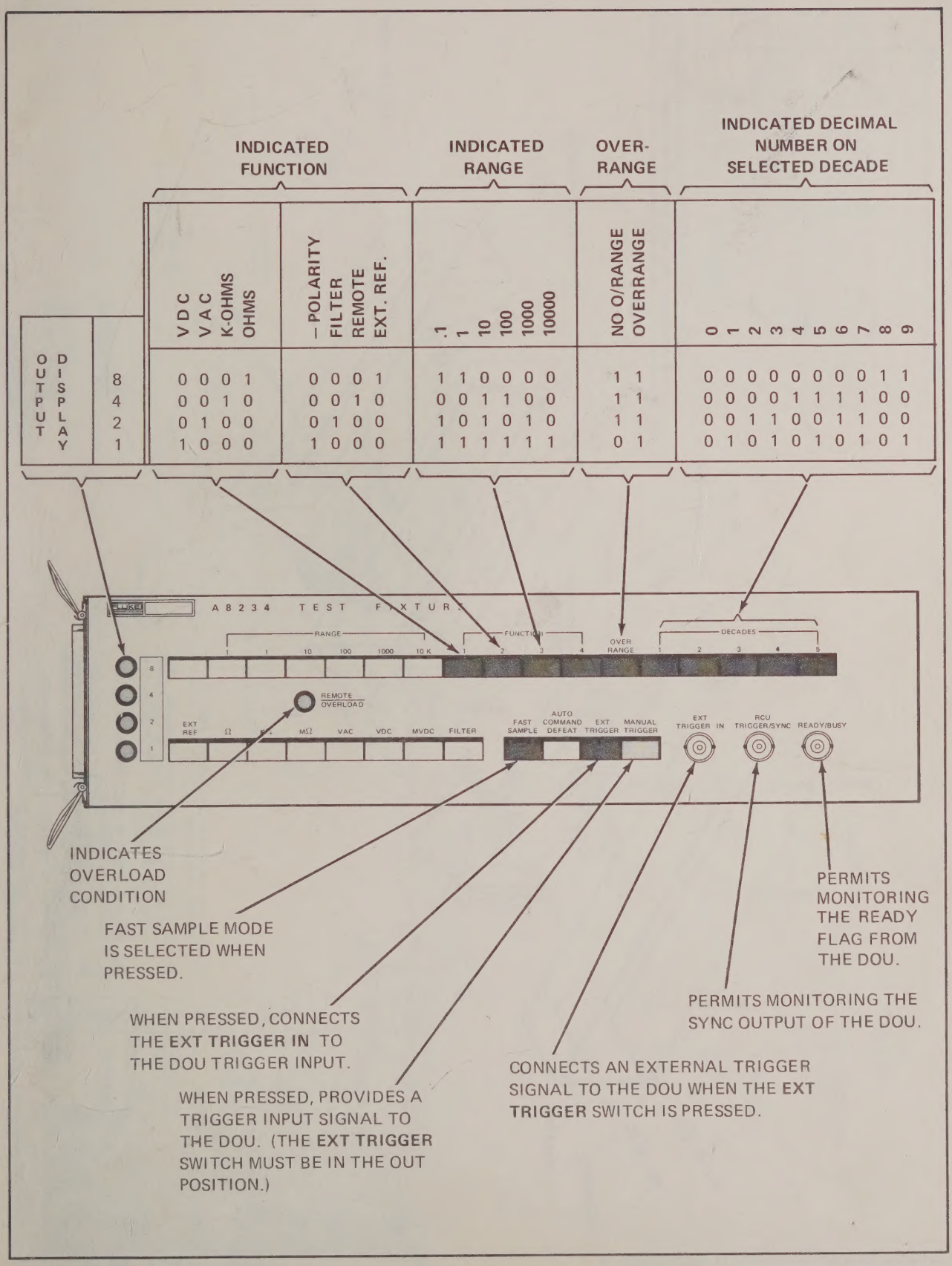
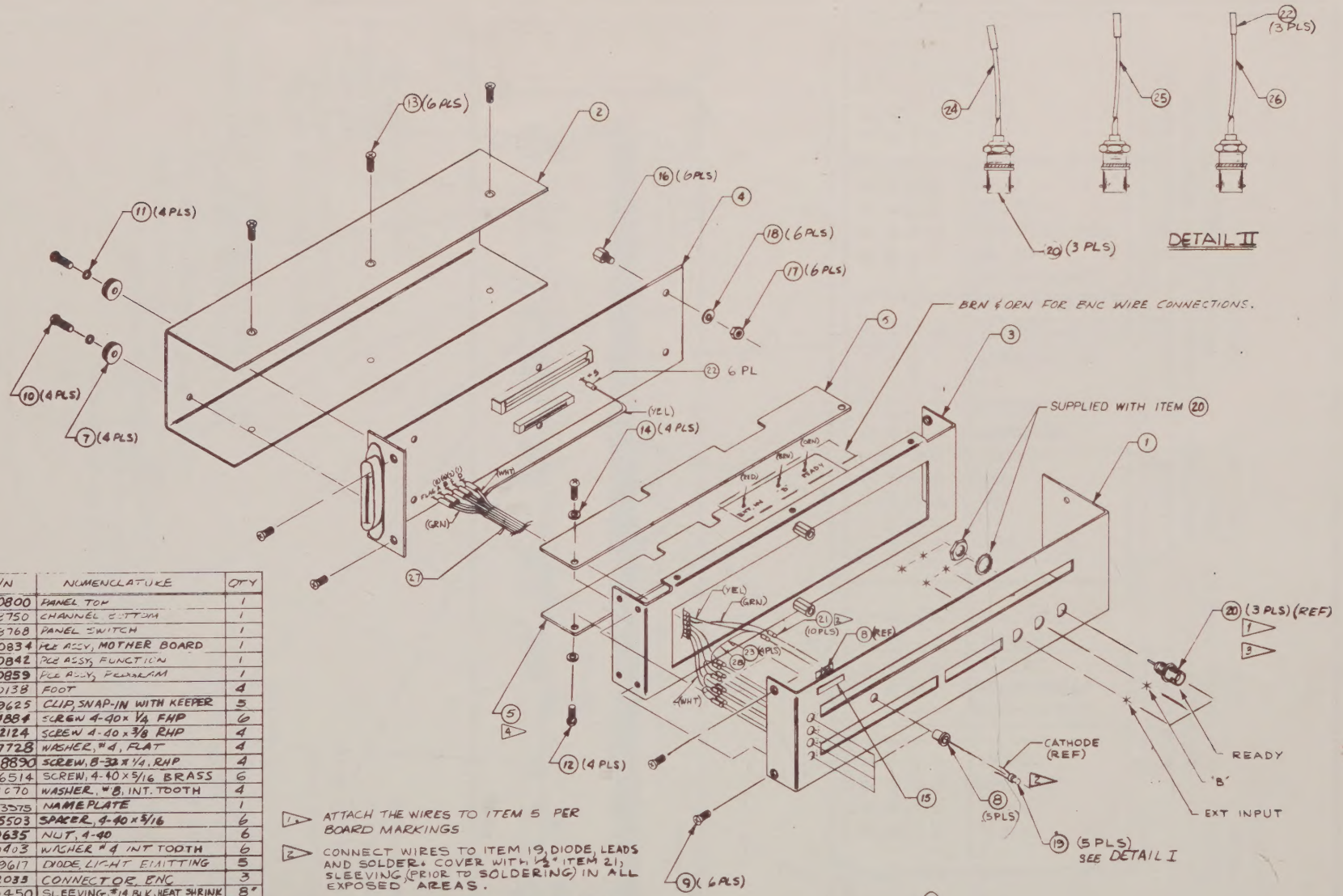

INDICATED FUNCTION
INDICATED RANGE
OVER-RANGE
INDICATED DECIMAL NUMBER ON SELECTED DECADE
OUTPUT DISPLAY
8 4 2 1
VDC VAC K-OHMS OHMS
– POLARITY FILTER REMOTE EXT. REF.
.1 1 10 100 1000 10000
NO O/RANGE OVERRANGE
0 1 2 3 4 5 6 7 8 9
0 0 0 1
0 0 1 0
0 1 0 0
1 0 0 0
0 0 0 1
0 0 1 0
0 1 0 0
1 0 0 0
1 1 0 0 0 0
0 0 1 1 0 0
1 0 1 0 1 0
1 1 1 1 1 1
1 1
1 1
1 1
0 1
0 0 0 0 0 0 0 0 1 1
0 0 0 0 1 1 1 1 0 0
0 0 1 1 0 0 1 1 0 0
0 1 0 1 0 1 0 1 0 1
A8234 TEST FIXTURE
RANGE
FUNCTION
OVER RANGE
DECADES
REMOTE OVERLOAD
EXT REF
Ω
MΩ
VAC
VDC
MVDC
FILTER
FAST SAMPLE
AUTO COMMAND DEFEAT
EXT TRIGGER
MANUAL TRIGGER
EXT TRIGGER IN
RCU TRIGGER/SYNC
READY/BUSY
INDICATES OVERLOAD CONDITION
FAST SAMPLE MODE IS SELECTED WHEN PRESSED.
WHEN PRESSED, CONNECTS THE EXT TRIGGER IN TO THE DOU TRIGGER INPUT.
WHEN PRESSED, PROVIDES A TRIGGER INPUT SIGNAL TO THE DOU. (THE EXT TRIGGER SWITCH MUST BE IN THE OUT POSITION.)
CONNECTS AN EXTERNAL TRIGGER SIGNAL TO THE DOU WHEN THE EXT TRIGGER SWITCH IS PRESSED.
PERMITS MONITORING THE SYNC OUTPUT OF THE DOU.
PERMITS MONITORING THE READY FLAG FROM THE DOU.

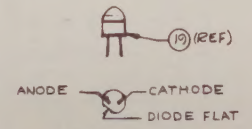
Figure 4. MODEL 8375, 8400 and 8425 DOU TESTING.

A8234 TEST UNIT FINAL ASSEMBLY
A8234-5001

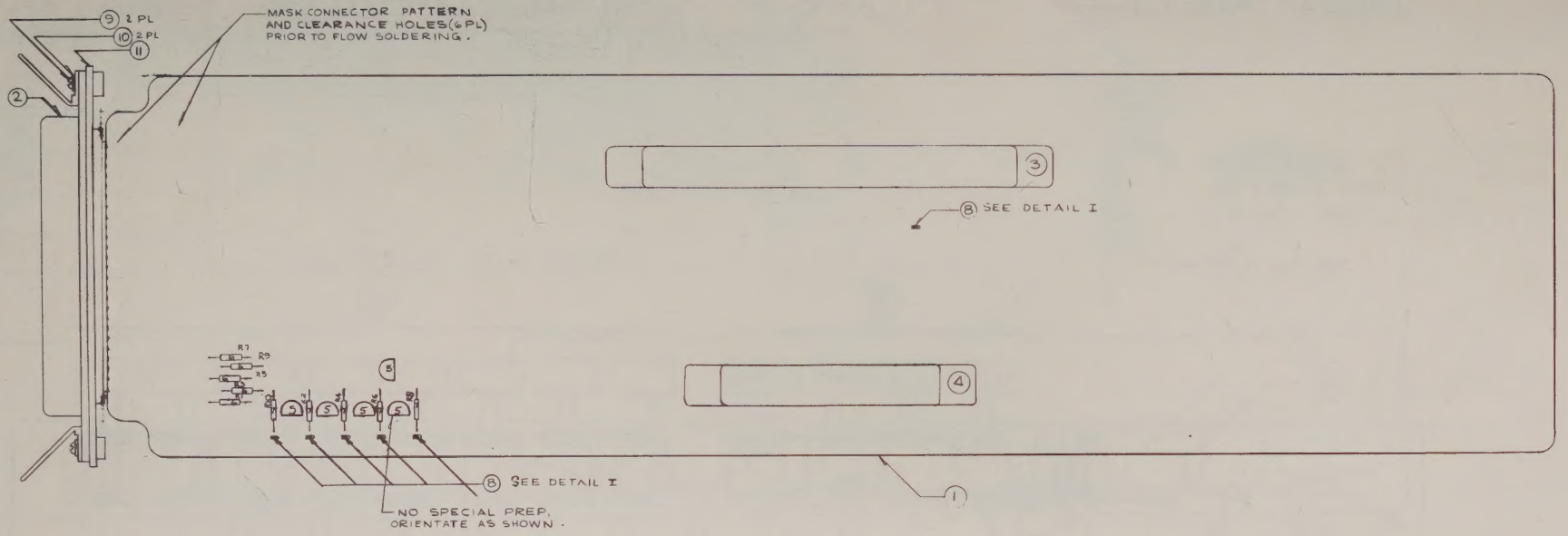


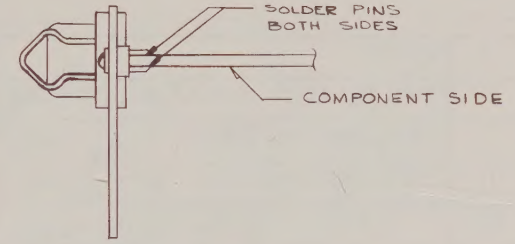
ITEM	P/N	NOMENCLATURE	QTY
1	360800	PANEL TOP	1
2	362750	CHANNEL BOTTOM	1
3	303768	PANEL SWITCH	1
4	360834	PCB ASSY, MOTHER BOARD	1
5	360842	PCB ASSY, FUNCTION	1
6	360859	PCB ASSY, PROGRAM	1
7	130138	FOOT	4
8	309625	CLIP, SNAP-IN WITH KEEPER	5
9	114884	SCREW 4-40 × 1/4 FHP	6
10	152124	SCREW 4-40 × 3/8 RHP	4
11	147728	WASHER, #4, FLAT	4
12	228890	SCREW, 8-32 × 1/4, RHP	4
13	306514	SCREW, 4-40 × 5/16 BRASS	6
14	111070	WASHER, #8, INT. TOOTH	4
15	333575	NAMEPLATE	1
16	275503	SPACER, 4-40 × 5/16	6
17	110635	NUT, 4-40	6
18	110403	WASHER #4 INT TOOTH	6
19	309617	DIODE, LIGHT EMITTING	5
20	152033	CONNECTOR, BNC	3
21	149450	SLEEVING, #14 BLK, HEAT SHRINK	8"
22	267534	RECEPT., AMP	9
23	115477	BUS, #24 AWG, BARE, SOLID	8"
24	115576	WIRE, #22, RED	3"
25	115790	WIRE #22, ORN	3"
26	115782	WIRE, #22, BRN	3"
27	157842	WIRE, HOOKUP, 10 COND., FLAT CABLE	10"
28	136717	SLEEVING #22	6"
29	266056	CONNECTOR	1

1. ATTACH THE WIRES TO ITEM 5 PER BOARD MARKINGS
2. CONNECT WIRES TO ITEM 19, DIODE, LEADS AND SOLDER. COVER WITH 1/2" ITEM 21, SLEEVING (PRIOR TO SOLDERING) IN ALL EXPOSED AREAS.
3. SOLDER WIRES TO BNC CONNECTORS AS SHOWN IN DETAIL II.
4. APPLY CAUTION IN CONNECTING BOARD TO MOTHER BOARD, TO KEEP FROM INTERFERING WITH THE TRANSISTORS.
5. PACKAGE & SHIP WITH THE INSTRUMENT.
6. TEST PER A8234-130 SPECIFICATION CONTROL DRAWING.



DETAIL I



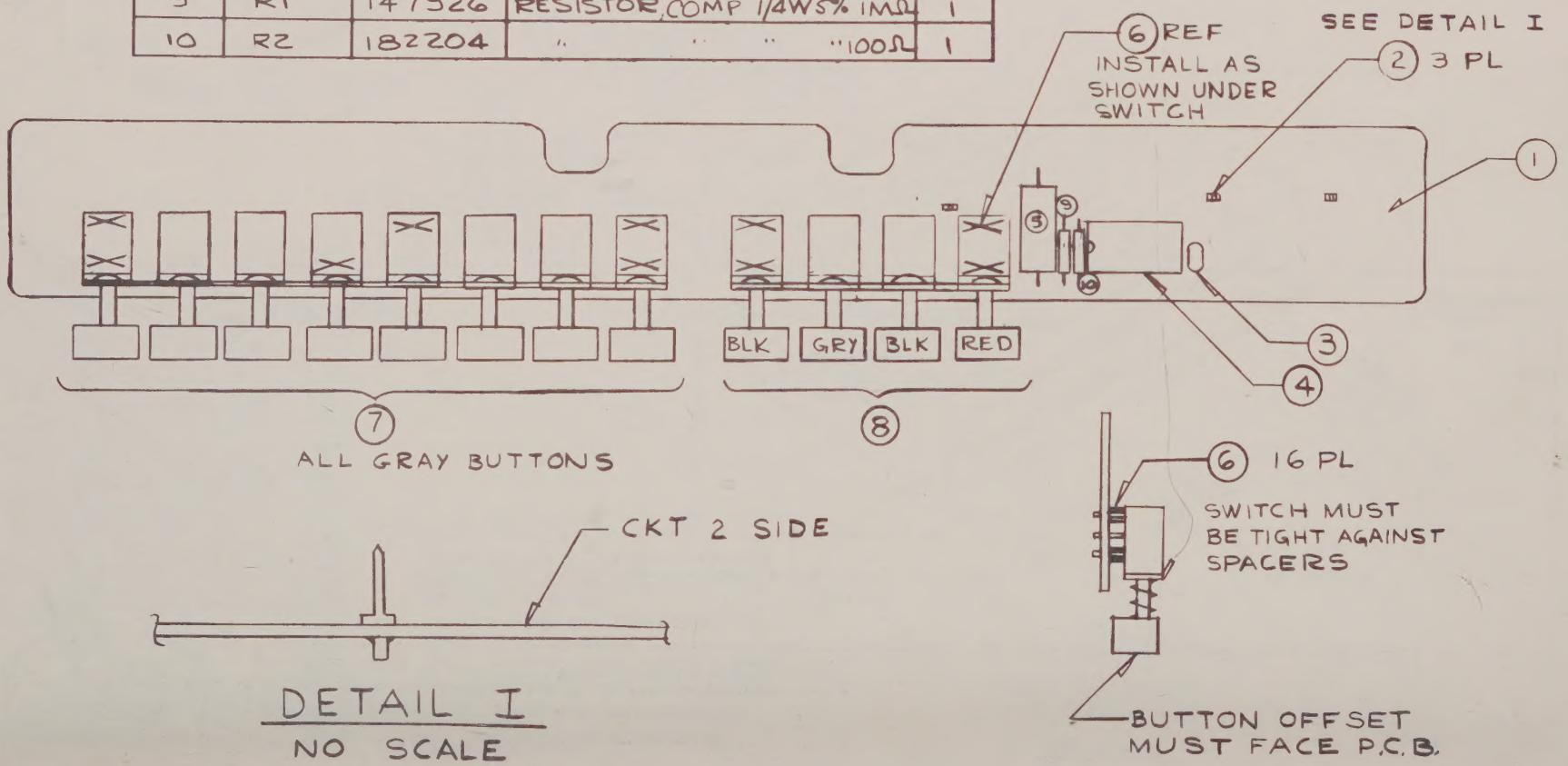


DETAIL I
(NO SCALE)

ITEM	REF DES	P/N	NOMENCLATURE	QTY
1	—	360818	A8234-3001 PCB	1
2	J1	267252	CONNECTOR, 50 PIN	1
3	J2	285247	CONNECTOR, 36 PIN	1
4	J3	292912	CONNECTOR, 20 PIN	1
5	Q1-Q5	218396	TRANSISTOR, 2N3904	5
6	R1,3,5,7,9	246967	RES., FIXED, COMP., 1/8W, 10%, 6.8K	5
7	R2,4,6,8,10	261834	RES., FIXED, COMP., 1/8W, 10%, 270Ω	5
8	—	267500	AMP PIN	6
9	—	149534	SCREW, #2-56 X 1/4, RHP	2
10	—	110676	WASHER, #2, SPLIT	2
11	—	303776	A4200-2005, BKT, CONN.	1

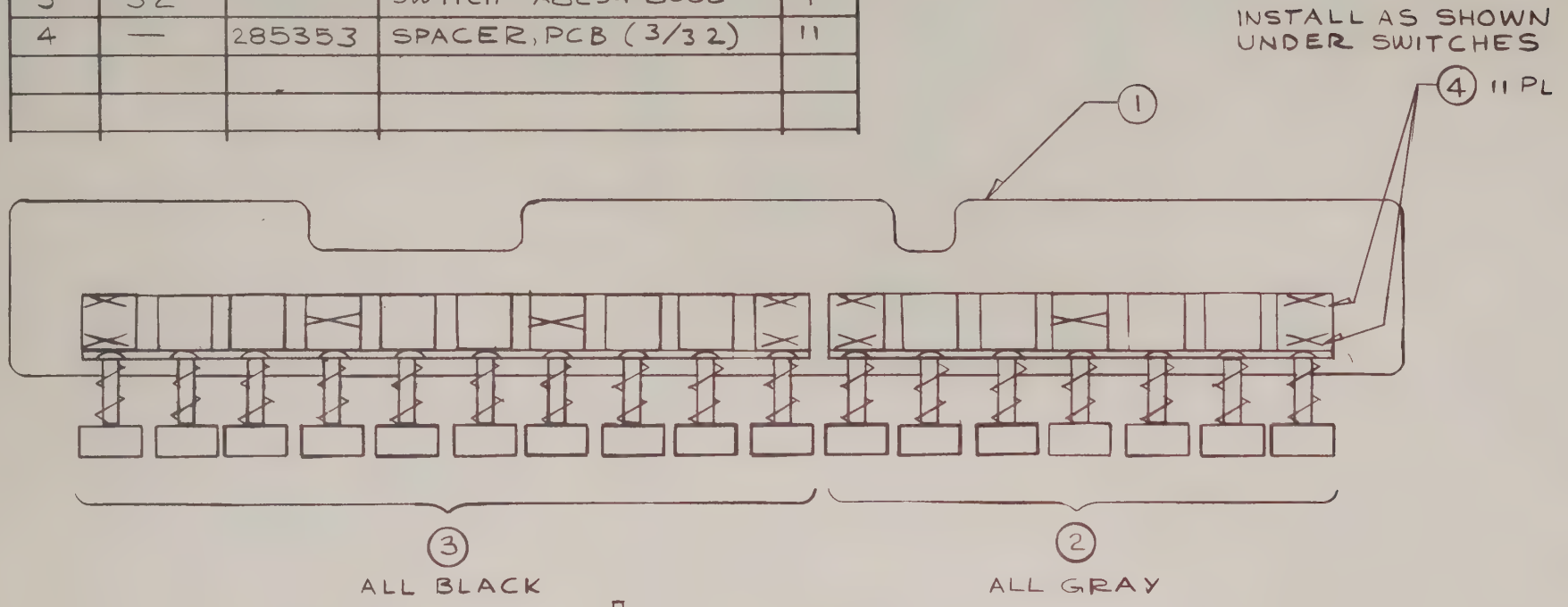
MOTHER BOARD, PCB ASSEMBLY
A8234-4001

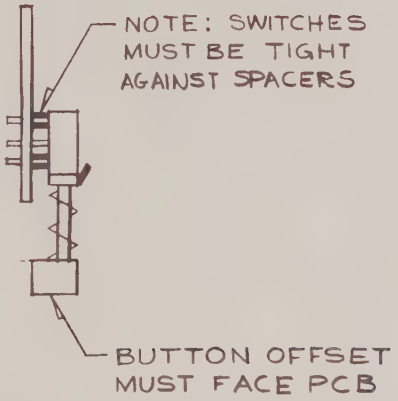
ITEM	REF DES	P/N	NOMENCLATURE	
1	—	360883	FUNCTION, PCB	1
2	—	267500	AMP PIN	3
3	C1	161919	CAP, TANT 1uf 35V	1
4	U1	293050	INTEGRATED CIRCUIT, 14 PIN	1
5	C2	159392	CAP, MYLAR, .22μF	1
6	—	285353	SPACER, PCB (3/32)	10
7	S3	—	SWITCH A8234-8003	1
8	S4	—	SWITCH A8234-8004	1
9	R1	147926	RESISTOR, COMP 1/4W 5% 1MΩ	1
10	R2	182204	" " " 100Ω	1



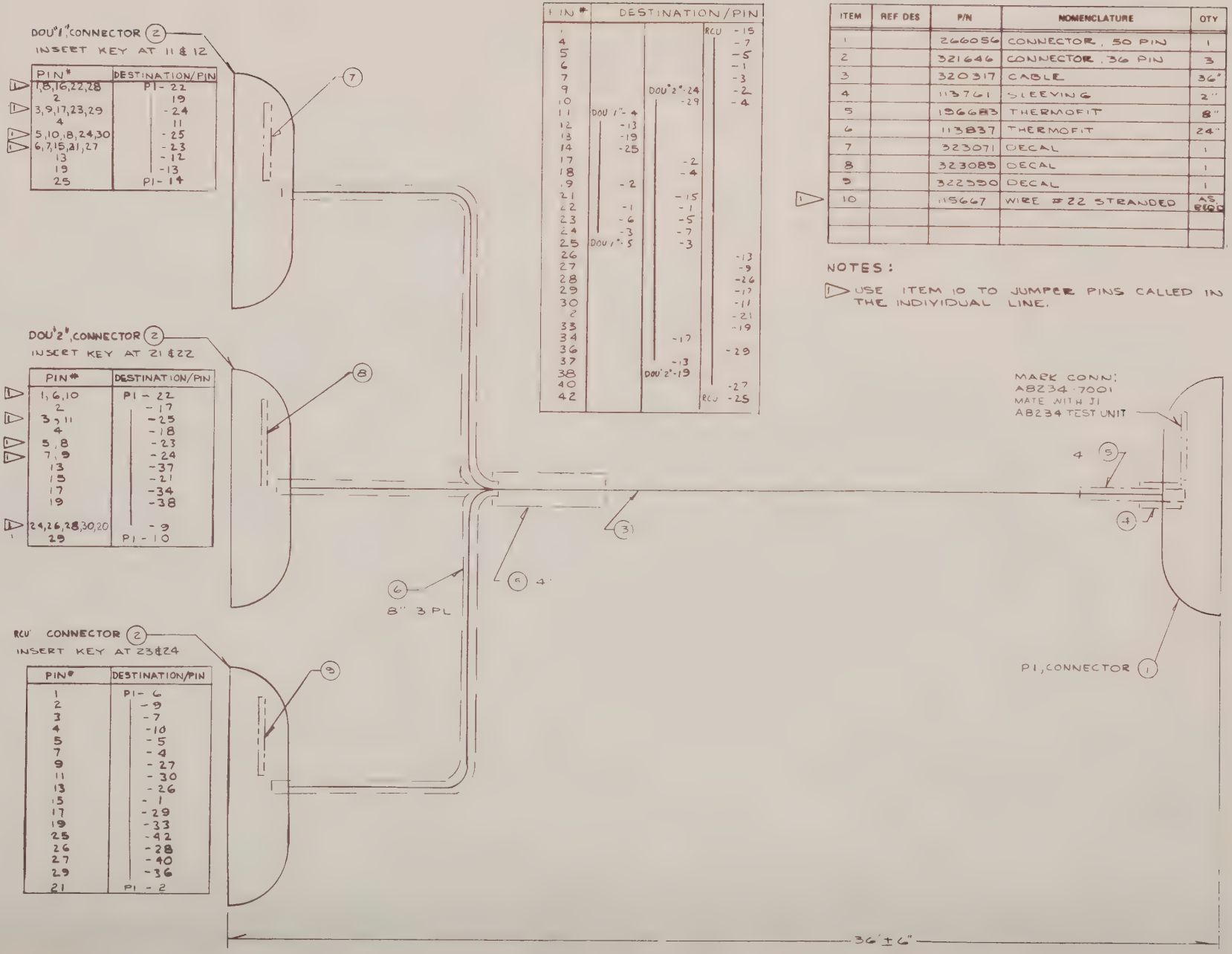
DETAIL I
NO SCALE

ITEM	REF DES	P/N	NOMENCLATURE	QTY
1	—	360826	A8234-3003, PROGRAM, PCB	1
2	S1	—	SWITCH A8234-8001	1
3	S2	—	SWITCH A8234-8002	1
4	—	285353	SPACER, PCB (3/32)	11





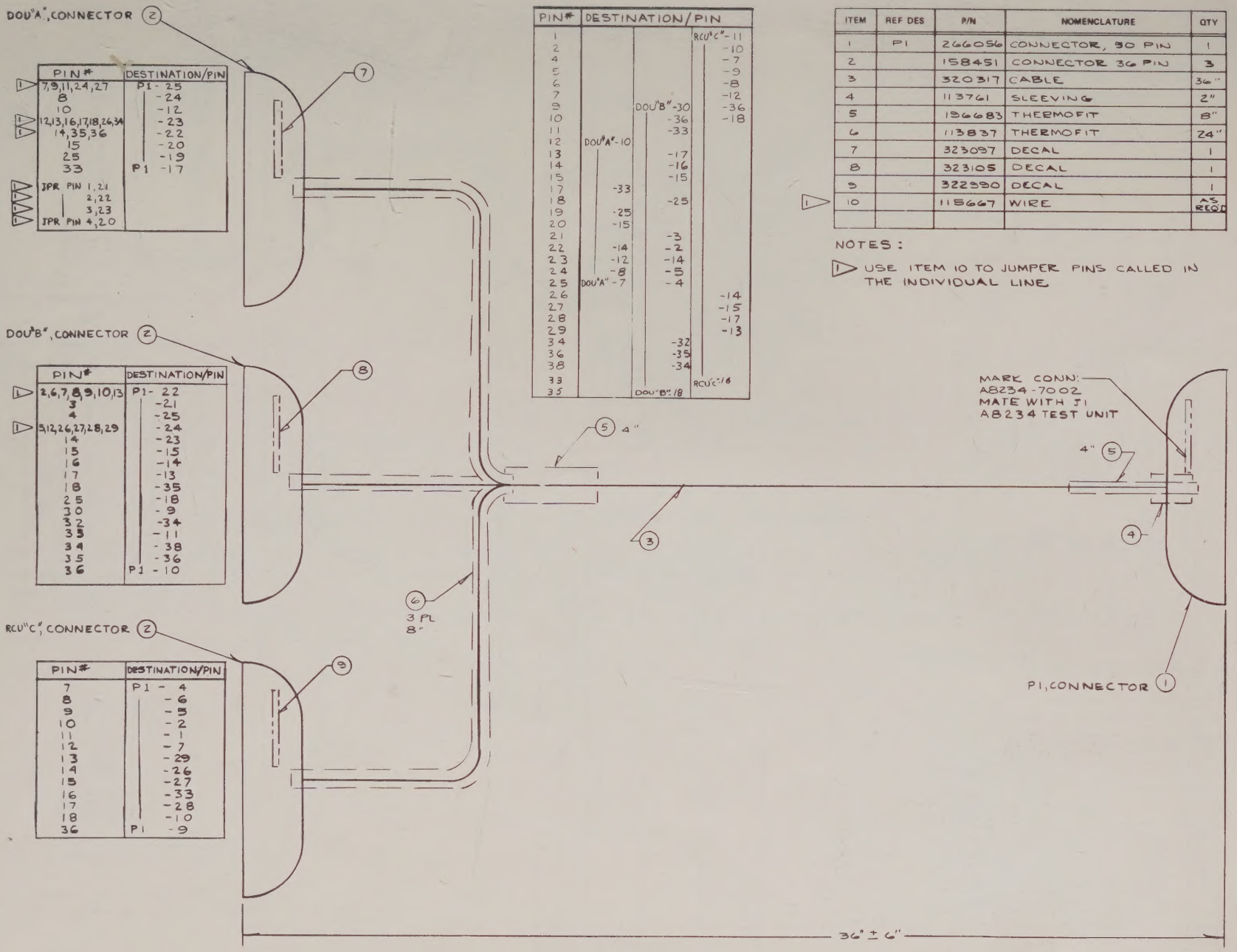
8200 TEST CABLE ASSEMBLY A8234-7001



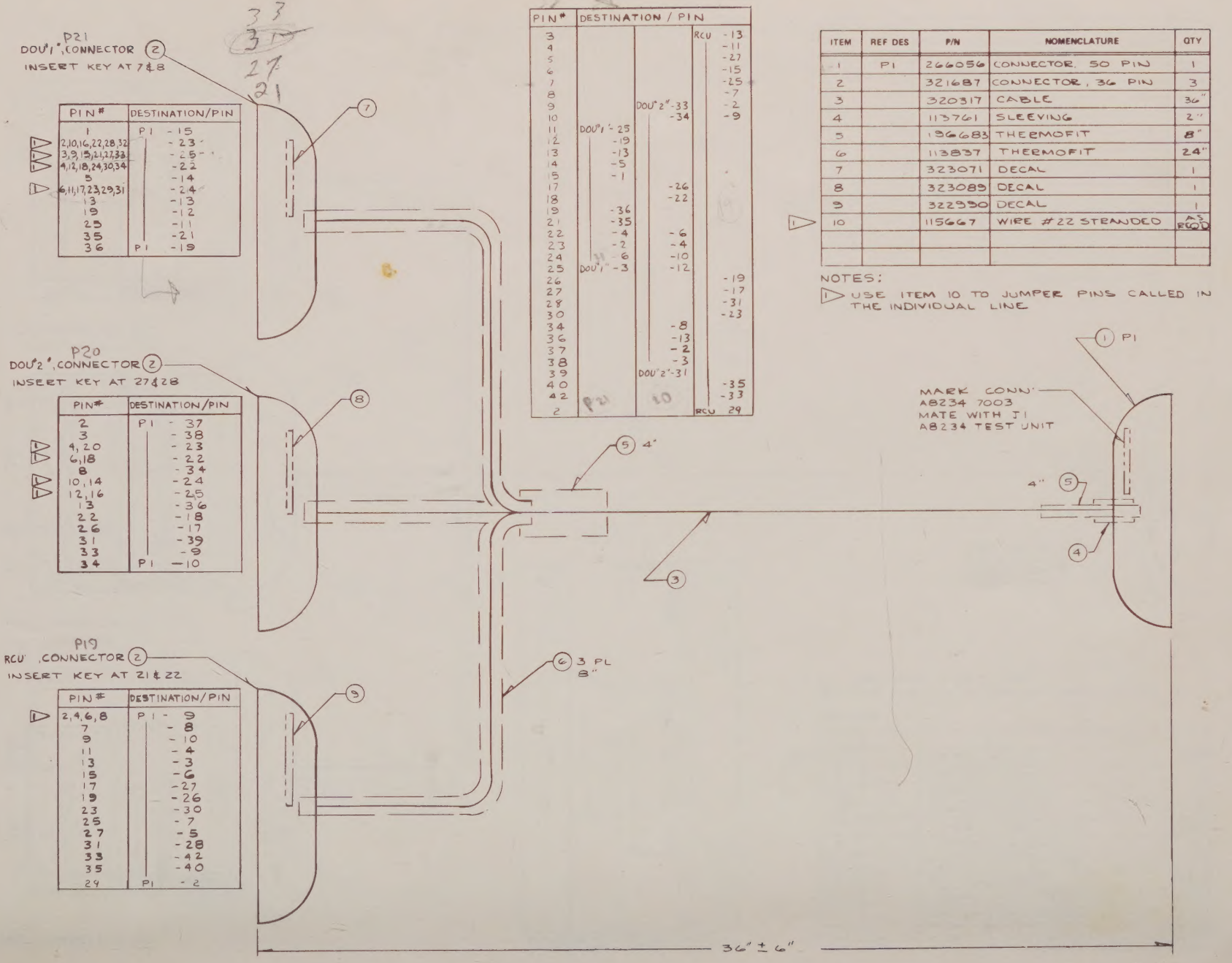
ITEM	REF DES	P/N	NOMENCLATURE	QTY
1		266056	CONNECTOR, 50 PIN	1
2		321646	CONNECTOR, 36 PIN	3
3		320317	CABLE	36"
4		113761	SLEEVING	2"
5		196683	THERMOFIT	8"
6		113837	THERMOFIT	24"
7		323071	DECAL	1
8		323089	DECAL	1
9		322990	DECAL	1
10		115667	WIRE #22 STRANDED	AS REQ'D

NOTES:

1. USE ITEM 10 TO JUMPER PINS CALLED IN THE INDIVIDUAL LINE.



8300 TEST CABLE ASSEMBLY
A8234-7002



PIN#	DESTINATION/PIN
1	P1 - 15
2,10,16,22,28,32	- 23
3,9,15,21,27,33	- 25
4,12,18,24,30,34	- 22
5	- 14
6,11,17,23,29,31	- 24
13	- 13
19	- 12
25	- 11
35	- 21
36	P1 - 19

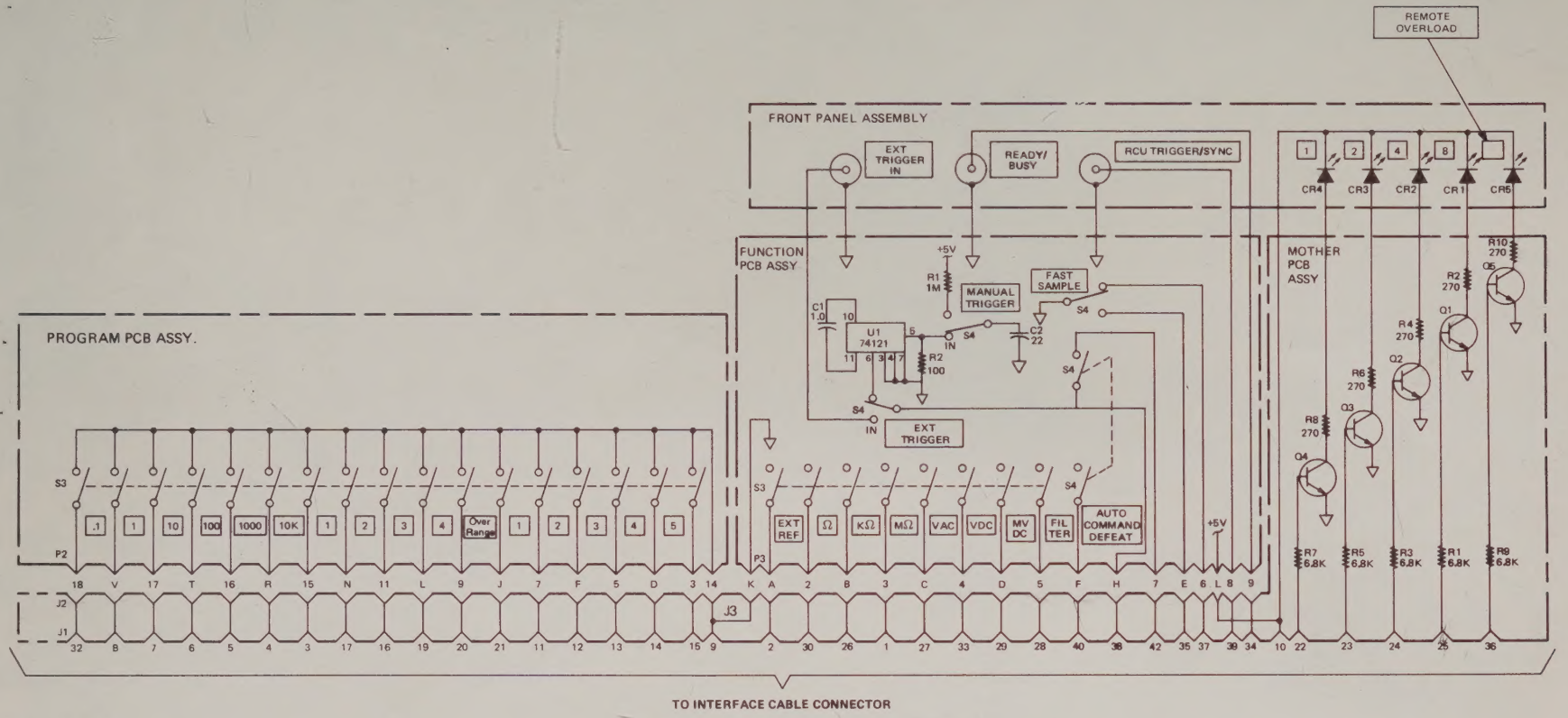
PIN#	DESTINATION/PIN
2	P1 - 37
3	- 38
4, 20	- 23
6, 18	- 22
8	- 34
10, 14	- 24
12, 16	- 25
13	- 36
22	- 18
26	- 17
31	- 39
33	- 9
34	P1 - 10

PIN#	DESTINATION/PIN
2, 4, 6, 8	P1 - 9
7	- 8
9	- 10
11	- 4
13	- 3
15	- 6
17	- 27
19	- 26
23	- 30
25	- 7
27	- 5
31	- 28
33	- 42
35	- 40
29	P1 - 2

PIN#	DESTINATION / PIN		
3			RCU - 13
4			- 11
5			- 27
6			- 15
7			- 25
8			- 7
9		DOU2" - 33	- 2
10		- 34	- 9
11	DOU1" - 25		
12	- 19		
13	- 13		
14	- 5		
15	- 1		
17		- 26	
18		- 22	
19	- 36		
21	- 35		
22	- 4	- 6	
23	- 2	- 4	
24	- 6	- 10	
25	DOU1" - 3	- 12	
26			- 19
27			- 17
28			- 31
30			- 23
34		- 8	
36		- 13	
37		- 2	
38		- 3	
39		DOU2" - 31	
40			- 35
42			- 33
2	P2	10	RCU 29

ITEM	REF DES	P/N	NOMENCLATURE	QTY
1	P1	266056	CONNECTOR, 50 PIN	1
2		321687	CONNECTOR, 36 PIN	3
3		320317	CABLE	36"
4		113761	SLEEVING	2"
5		196683	THERMOFIT	8"
6		113837	THERMOFIT	24"
7		323071	DECAL	1
8		323089	DECAL	1
9		322930	DECAL	1
10		115667	WIRE #22 STRANDED	AS REQD

NOTES:
1. USE ITEM 10 TO JUMPER PINS CALLED IN THE INDIVIDUAL LINE



A8234 SCHEMATIC
A8234-1001

FEBRUARY 1976 LITHO. IN U.S.A.